

also perused all other prior art references that applicants are aware that most closely relate to the subject matter of the claimed invention. Based upon the foregoing study and perusal and in the interest of fulfilling the duty of full disclosure, applicants respectfully request that the Examiner make of record the United States Patent No.

5,536,591. The '591 reference was cited, discussed and incorporated by reference in specification of the instant application. The subject matter of the '591 reference was also discussed in detail during the course of personal interviews that the Examiner courteously granted.

Applicants believe that the '591 patent along with United States Patent No. 3,972,829 to Michalko (cited in the Interview Summary Form of 2/27/02 and that applicants understand will be applied against the claims in the next office action) represent the closest prior art of which applicants are aware to the subject matter of the instant patent application.

#### The Office Action

The Office Action is discussed in detail below. Support for the amendments to claims 9 and 10 is found in the specification as originally filed. No new matter has been added. No new issues have been presented.

Claim Objections

## Paragraph 2 of Office Action

Claims 9 and 10 are objected to because of the following informalities: a comma "," in line 3 after "nickel" is not needed since only two components are listed in the markush group. The comma should be deleted.

Claims 9 and 10 have been appropriately amended to correct the informalities and applicants request that the objection be removed.

Claim Rejections- 35 USC 102(b)

## Paragraph 4 of Office Action

Claims 1-10, 15-17, 19-22 30-37, 42-44 and 47-49 are rejected under 35 USC 102(b) as being anticipated by Ward (U.S. Patent Number 4,686,030).

Applicants' claim 1 recites:

## 1. A catalyst, comprising:

a metal particulate having a particle size of less than about 100 Angstroms, said metal particulate consisting essentially of at least one non-noble metal; and  
a support.

Ward teaches a hydrocracking catalyst that is in the form of an oxide (see Ward, col 4, line 49; col 4, lines 62,63; col 12, line 18). However, Ward fails to either teach or suggest a catalyst comprising a metal particulate as claimed by applicants in claim 1. As discussed during the Interview of 2/27/02, applicants' metal particulate is not an oxide.

Hence, Ward fails to teach or suggest the limitations of applicants' claimed invention as recited in applicants' claim 1. The rejection of claim 1 as being anticipated by Ward under 35 USC 102(b) is improper and applicants respectfully request that the rejection be removed.

Applicants' claim 30 recites:

30. A catalyst, comprising:

*a nickel and/or nickel alloy particulate having a particle size of less than about 100 Angstroms, said nickel alloy lacking platinum and palladium; and  
a support.*

As discussed, Ward teaches a hydrocracking catalyst that is in the form of an oxide. The oxide may be NiO (see Ward, col 6, line 38; col 9, line 41; col 12, line 18).

However, Ward fails to teach or suggest a catalyst comprising a nickel and/or nickel alloy particulate as claimed by applicants in claim 30. As discussed during the Interview of 2/27/02, applicants' nickel and/or nickel alloy particulate is not an oxide. Hence, Ward fails to teach or suggest the limitations of applicants' claimed invention as recited in applicants' claim 30. The rejection of claim 30 as being anticipated by Ward under 35 USC 102(b) is thus improper and applicants respectfully request that the rejection be removed.

Claims 2-10, 15-17 and 19-22 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 31-37, 42-44 and 47-49 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. Hence, Ward fails to teach or suggest all of the limitations of claims 2-10, 15-17, 19-22, 31-37, 42-44 and 47-49. The rejection of claims 2-10, 15-17, 19-22, 31-37, 42-44 and 47-49 as being anticipated by Ward under 35 USC 102(b) is thus also improper and applicants respectfully request that the rejection be removed.

Claim Rejections - 35 USC 102(b)/103

Paragraph 6 of the Office Action

Claims 29 and 55 are rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Ward (US Patent No. 4,686, 030).

As discussed above, Ward fails to teach or suggest all of the limitations of claim 1. Claim 29 depends from claim 1 and includes all of the limitations of claim 1 as well as further limitations. Hence, Ward fails to teach or suggest all of the limitations of claim 29, and a rejection of claim 29 under 35 USC 102(b) or 35 USC 103(a) is improper.

Likewise, as discussed, Ward fails to teach or suggest all of the limitations of claim 30. Claim 55 depends from claim 30 and includes all of the limitations of claim 30 as well as additional limitations. Hence, Ward fails to teach or suggest all of the limitations of claim 55, and a rejection of claim 55 under 35 USC 102(b) or 35 USC 103(a) is improper.

Applicants respectfully request that the rejection of claims 29 and 55 as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Ward be removed.

**Claim Rejections - 35 USC 103****Paragraph 8 of the Office Action**

Claims 14, 27, 28, 41, 53 and 54 are rejected under 35 USC 103(a) as being unpatentable over Ward (U.S. Patent Number 4,686, 030).

As discussed above Ward fails to teach or suggest all of the limitations of claims 1 and 30. Claims 14, 27 and 28 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 41, 53 and 54 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. Hence, Ward fails to teach or suggest all of the limitations of claims 14, 27, 28, 41, 53 and 54. A rejection of claims 14, 27, 28, 41, 53 and 54 under 35 USC 103(a) as being unpatentable over Ward is thus improper and applicants request that the rejection be removed.

**Paragraph 9 of Office Action**

Claims 25 and 51 are rejected under 35 USC 103(a) as being unpatentable over Ward as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44 and 47-49 and further in view of Tsou et al "hereinafter Tsou" (U.S. Patent 5,171,644).

Claim 25 depends from claim 1 and includes all of the limitations of claim 1 as well as additional limitations. Claim 51 depends from claim 30 and includes all of the limitations of claim 30 as well as additional limitations. As discussed, Ward fails to teach or suggest all of the limitations of claims 1 and 30. Tsou fails to make up for the deficiencies of Ward, and the combination of Ward in view of Tsou fails to teach or suggest all of the limitations of claims 25 and 51. Hence, the rejection of claims 25 and 51 under 35 USC 103(a) as being unpatentable over Ward in view of Tsou is improper and applicants respectfully request that the rejection be removed.

**Paragraph 10 of Office Action**

Claims 18, 24, 45 and 46 are rejected under 35 USC 103(a) as being unpatentable over Ward as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44 and 47-49 above, and further in view of Flytani-Stephanopoulos (U.S. Pat. 4,729,889).

As discussed, Ward fails to teach or suggest all of the limitations of applicants' claims 1 and 30. Claims 18 and 24 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 45 and 46 depend from claim 30 and include all of

the limitations of claim 30 as well as additional limitations. Hence, Ward fails to teach or suggest all of the limitations of claims 18, 24, 45 and 46. Flytani-Stephanopoulos fails to make up for the deficiencies of Hatura, and the combination of Ward in view of Flytani-Stephanopoulos fails to teach or suggest all of the limitations of claim 18, 24, 45 and 46. Hence, the rejection of claims 18, 24, 45 and 46 under 35 USC 103(a) as being unpatentable over Ward in view of Flytani-Stephanopoulos is improper and applicants respectfully request that the rejection be removed.

**Paragraph 11 of Office Action**

Claims 11-13 and 38-40 are rejected under 35 USC 103(a) as being unpatentable over Ward as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44 and 47-49 above, and further in view of Ovshinsky (U.S. Pat. 5,277,999).

As discussed, Ward fails to teach or suggest all of the limitations of applicants' claims 1 and 30. Claims 11-13 depend from claim 1 and include all of the limitations of claim 1 while claims 38-40 depend from claim 30 and include all of the limitations of claim 30. Hence, Ward fails to teach or suggest all of the limitations of claims 11-13 and 38-40. Ovshinsky fails to make up for the



deficiencies of Ward, and the combination of Ward in view of Ovshinsky fails to teach or suggest all of the limitations of claims 11-13 and 38-40. The rejection of claims 11-13 and 38-40 under 35 USC 103(a) as being unpatentable over Ward in view of Ovshinsky is thus improper and applicants respectfully request that the rejection be removed.

**Paragraph 12 of Office Action**

Claims 23, 26, 50 and 52 are rejected under 35 USC 103(a) as being unpatentable over Ward as applied to claims 1-10, 15-17, 19-22, 30-37, 42-44 and 47-49 above, and further in view of Hatura (U.S. Pat. 5,506,273).

As discussed, Ward fails to teach or suggest all of the limitations of applicants' claims 1 and 30. Claims 23, 26 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 50 and 52 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. Hence, Ward fails to teach or suggest all of the limitations of claims 23, 26, 50 and 52. Hatura fails to make up for the deficiencies of Ward, and the combination of Ward in view of Hatura fails to teach or suggest all of the limitations of claim 23, 26, 50 and 52. The rejection

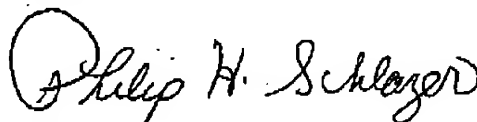
of claims 23, 26, 50 and 52 under 35 USC 103(a) as being unpatentable over Ward in view of Hatura is thus improper an applicants request it be removed.

SUMMARY

In view of the above remarks and amendments, claims 1-55 are in a condition for allowance. Applicants respectfully request reconsideration, withdrawal of the outstanding objections and rejections, and notification of allowance.

Should the Examiner have any questions or suggestions regarding the prosecution of this application, she is asked to contact applicants' representative at the telephone number listed below.

Respectfully submitted,



Philip H. Schlazer  
Reg. No. 42,127

Date: 8 April 2002  
Energy Conversion Devices  
1675 W. Maple Road  
Troy, MI 48324  
Phone: (248) 293-0440 ext 6260  
Fax: (248) 844-2273

Marked-up copy of the amendments

9. (Twice Amended) The catalyst of claim 1, wherein said particulate comprises at least one metal selected from the group consisting of nickel[,] and nickel alloy.

10. (Twice Amended) The catalyst of claim 1, wherein said particulate consists essentially of at least one metal selected from the group consisting of nickel[,] and nickel alloy.